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# Package Tracker

Team Members:

Chase Grajeda(grajec)

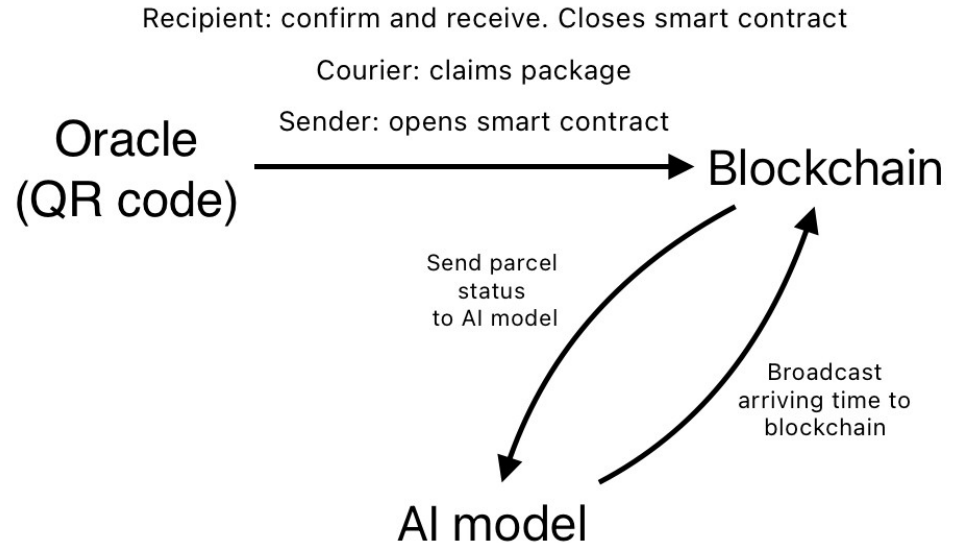
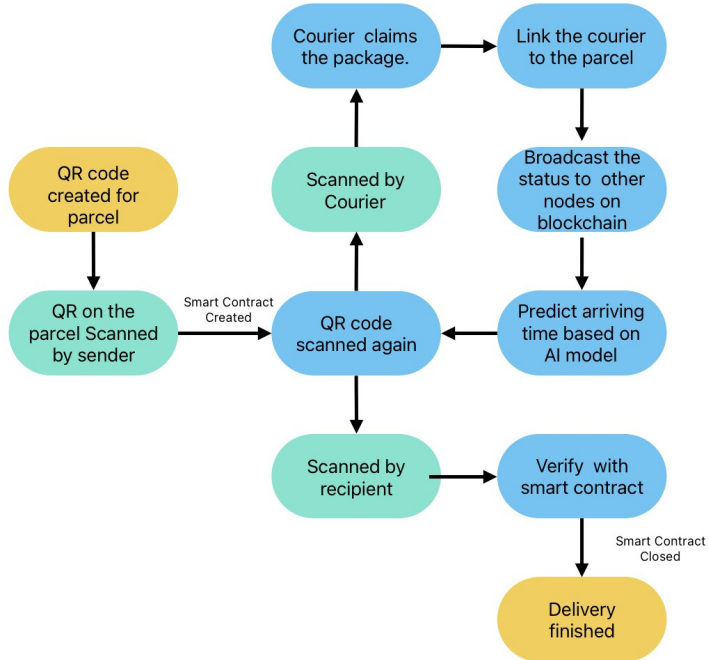
Jianye Peng (pengj6)

Eddie Poon (poone)

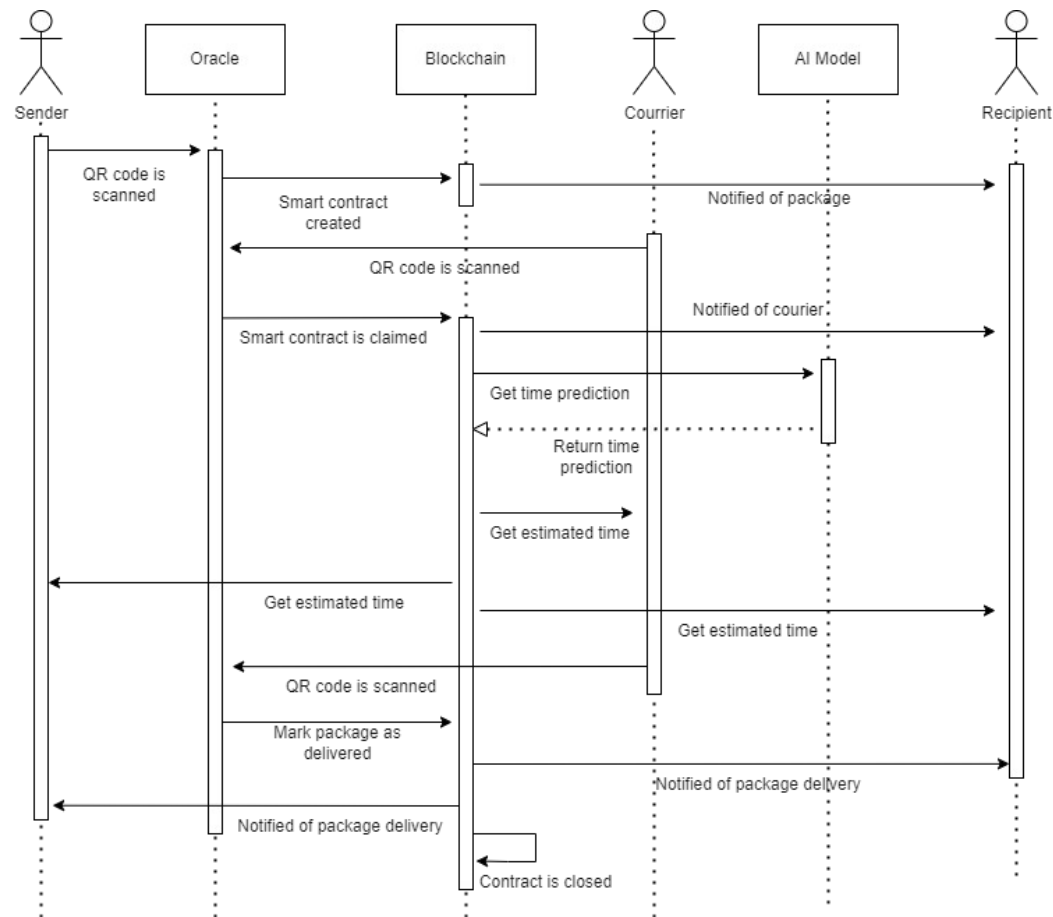
Aneesh Kolukuluri (koluka)

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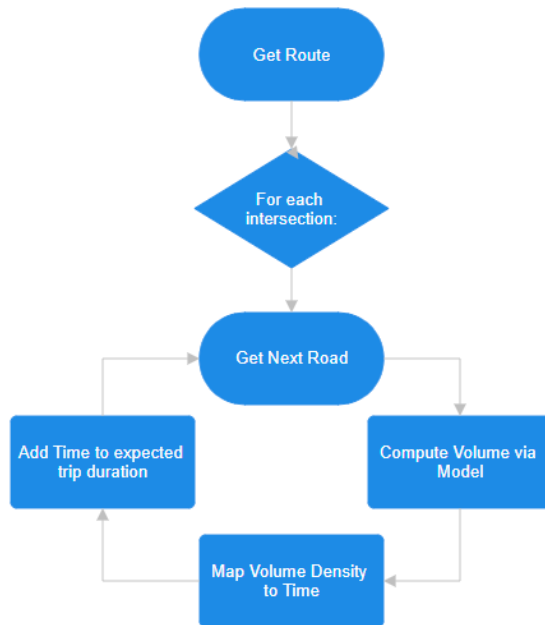
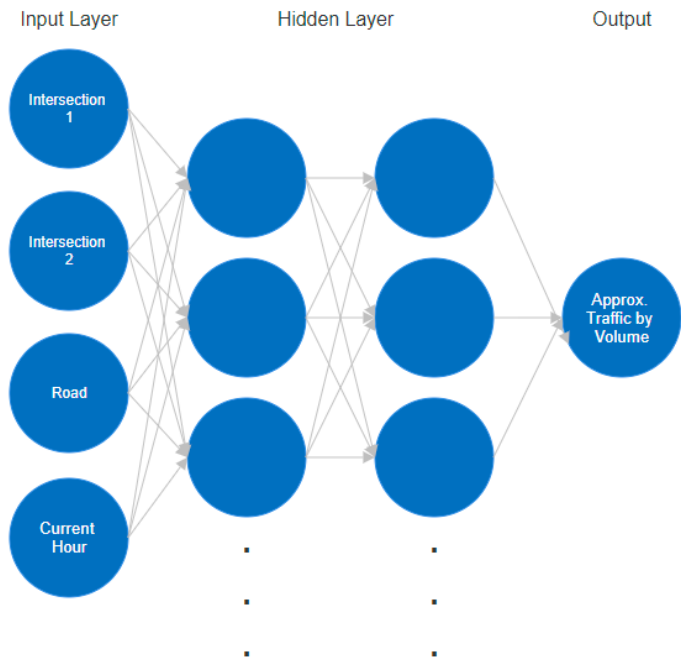
# High-level component diagram



# Sequence Diagram



# AI Model



- ☐ Iterative model for computing trip duration
- ☐ Dataset is spliced together from NYC Open Data. We will only query the information for Manhattan
- ☐ To effectively operate over all of the data, a Neural Network will be used and trained via PyTorch
- ☐ 70% will be randomly selected for training, 10% for validation, and 20% for testing
- ☐ A potential route is calculated from API
- ☐ For each intersection in the route, iteratively call the model to determine the expected traffic density and expected time to drive through the current segment.
- ☐ Sum time segments for final result
- ☐ Return to application

Datasets:

*Borough-Street hourly volume*

<https://data.cityofnewyork.us/Transportation/Automated-Traffic-Volume-Counts/7ym2-wayt>

*Speed limits by street*

[https://data.cityofnewyork.us/Transportation/VZV\\_Speed-Limits/7n5j-865y](https://data.cityofnewyork.us/Transportation/VZV_Speed-Limits/7n5j-865y)

*Trimmed Street hourly volume*

<https://data.cityofnewyork.us/Transportation/Traffic-Volume-Counts/btm5-ppia>

# Blockchain

QR codes that call smart contract functions on being scanned can be created to trigger actions and send messages to sender, courier, and recipient. Extra information can be found [here](#).

The first time a QR code is scanned the contract can be launched and information can be sent to the recipient via calling a function.

Similarly, the second time the QR is scanned we can call a function to perform a sequence of actions including updating the courier information, and sending estimated arrival time to all parties involved by communicating with the AI model.

The last time a QR is scanned we will notify all parties that the package has been delivered and the smart contract can be closed.

Solidity events can be used to mark the scanning of the 3 QR codes to create a log and general functions can be created to communicate between all parties and exchange information on arrival time and status.

Q&A